As both a radio amateur and an electrical engineer working on HF communication products for US government and commercial uses, I am rather concerned about the effects of the current technology used for BPL.

There is a test system about 2 miles from where I work, and the HF signal from this system (Amperion) is very detectable as about a S-3 to S-9 reading (depending on frequency) on the KWM-380's in the club station at my employer's address.

If this type of interference to HF is typical, then when whole cities get turned-on, it is obvious that the entire HF spectrum will become almost unusable in populated BPL areas. This is of personal concern to me as both my hobby and my livelyhood is at risk with the deployment of this immature technology.

I unfortunately did not have time to take calibrated readings of the interference we are hearing in Cedar Rapids, IA due to a very short window of time from the start up of the BPL test system and the May 3rd comment filing deadine.

It is my (highly educated) personal belief that the Part 15 rules are too leinient for systems that are up 24/7 and cover a large geographic area. I hope that the FCC plans on heeding the commentary proposed in the NTIA study on BPL. I was impressed by the similiarity of predictions made by the ARRL two years ago (and available on the arrl.org website) to the commentary from the NTIA.

It is obvious that contrary to the assertions of the BPL industry (Para 20), their systems WILL interfere with licensed communications. The physics behind radio systems clearly show they they will. So it's the FCC's responsibility to see that such systems can co-exist with licensed services and give PRIORITY to the licensed services in cases where they won't.

(Para 21) HomePlug systems do not interfere with most amateur radio frequencies anymore due to the fact that the ham bands are NOTCHED out. Initial HomePlug units did not notch out ham frequencies and were a source of numerous problems to Amateurs. Paragraph 21 in the Docket is working under a false assumption.

Many amateurs would like to see an all out ban on this technology. I personally think it could be a useful system in the short term, if more research is put into systems that are less interfering.

However, many of the goals of BPL will fall short because the laws of physics will prevail. For example: reaching rural customers.

It just so happens that I live 20 miles from normal broadband services. I do use a satellite downlink that is reasonably priced. No less than three companies have stated that service will start by me within 30-90 days for wireless ISPs at 900 MHz and 2.4 GHz. There will be plenty of options for me and my 36 acre lot, very soon.

I don't ever believe BPL will be one of them. Why? It is actually

a very similar system to DSL (except for the fact DSL is a completely balanced system using twisted pairs to keep interference to a minimum). Both systems could only propagate a short distance without being repeated. I understand that the repeaters have to be at about 300m or so over the line. Even if it were 1/4 mile, I highly doubt that someone could be profitable installing 80 repeaters from Cedar Rapids to my Rural location. I don't believe it's ever going to happen. Again one of the main thrusts of easing the Part 15 restrictions is based on an obviously false assumption.

Paragraph 22 (and the FCC seeming to agree with the statement in Paragraph 36) states that a power company believes that a system that taps a single phase of a several mile long piece of wire is not a good radiator. Long wire antennas tend to work very well at HF, and have been a common antenns for 100 years. Both the ARRL and the NTIA in their studies mathematically showed via NEC that this commentary is absolutely false.

Paragraph 24 states that noise aggregation is unlikely since two systems can only run in one area at one time. Again, due to the enhanced propagation at HF by both skywave (risking interference to other countries!) and enhanced groundwave propagtion, the basis for such comments seem again to run against established rules of radio physics. Another false assumption.

Paragraphs 24 and 25 state some interference mitigation techinques. As both a radio professional and radio amateur, I can only hope that such countermeasures are effective. It would have made great sense for the FCC to have more than just conjecture proving these paragraphs.

Realistically, I think BPL's days are numbered despite the current administrations efforts to push the system. DSL and cable and most wireless systems are already better technologies. BPL is inherently bandwidth limited as no matter how much power is pumped into the powerlines, they were never intended to be RF transmission lines. Therefore when fiber systems start to come to fruition, the MBPS data rate of BPL will eventually look slow. I can only hope that the BPL system does not artifically delay the deployment of fiber to the home, but inevitably it will.

But, on the other hand, it's unrealistic for the FCC to outright ban these systems. It IS realistic for the FCC to regulate them in such a manner that established services will have a chance for survival.

Paragraph 27 established the FCC's responsibility of regulation of such systems.

Paragraph 28 seems to state that only amateurs have a problem with the measurement aspects of Part 15. After reading the NTIA report, it seems that the NTIA report is commenting that the current extrapolation standards for very weak equipment should not be used to certify compliance. A 40 db/decade factor used in point source degradation does not seem to apply. a 20 db/decade factor seems to be more realistic. Why not measure it? It would not be that expensive or burdensome to do. It seems that having more strict

standards of measurement for part 15 compliance is justified in that report. So it's unfair again to claim that only Amateurs want a stricter enforcement.

Paragraph 29 states that some parties want in-situ measurements. If BPL is deployed, it is more than reasonable to make these measurements manditory, as the amount of financial burden on the utilities would be minimal. If this is implemented, then stricter standards would be easier to implement, and the systems would actually work better as a result as many faults with the lines could be found and fixed at deployment time.

Paragraph 31 states that interference concerns can be adequately addressed. I do not wish to insult the FCC, however, I have had personal experience with a utility and powerline interference to my ham station. The FCC sent notification to the utility, and in multiple cases the utility "promised" to fix the situation. Over the course of three years, it was NEVER resolved. I moved away from the location. I would bet if I brought an HF receiver to my old home the S-9+ interference would be still there. Enforcement of powerline complaints is already woefully inadequate and is bound to get worse with the introduction of BPL. Enforcement of the new rules for BPL needs to be expident and absolute.

Paragraph 38 breathes a sigh of relief into those of us opposed to BPL and who think the technology will interfere. It is a very wise move of the FCC to not allow relaxation of the standards at this time due to the fact that both side can only rely on mathematical models that may not accurately portray reality. I personally hope I'm wrong in my belief that BPL will be at least an annoyance at HF and at most armeggedon for HF. Keeping the status quo for now will mitigate problems if they do exist and if they don't prove the case once and for all.

As an Amateur operator, I personally appreciate the attention and respect that the FCC has given the Amateur community during this proceeding. I am sure the FCC can understand the reaction of the community since most of Amateurs believe that this will be a major problem, a problem that could end our 90 year-old hobby.

The NTIA cover letter states that certain frequencies should be protected (I read that as notched out) of BPL systems to protect government interests. Maybe a good compromise would be to notch out the amateur bands as well. The only problem with this line of thought however, is that other services would get no protection. The fact that the NTIA study even implies this seems to point to an acknowledgement that BPL can and WILL interfere with radio services.

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